

REMARKS

Claims 1-3, 5, 7-9, 11-13, 15, 17, 18 and 20-27 are pending in this application.

Claims 1-3, 5, 7, 8, and 24-27 stand rejected.

Allowable Subject Matter:

Applicants gratefully acknowledge the Examiner's indication that claims 9, 11-13, 15, 17, 18 and 20-23 are allowed.

REJECTIONS UNDER 35 U.S.C. § 103:

Reconsideration is respectfully requested of the rejections of claims 1-3, 5, 7, 8 and 24-27 under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art, Iyer (U.S. Patent No. 6,383,723) and Schulz (U.S. Patent No. 5,637,151).

Applicants respectfully submit that admitted prior art ("APA"), Iyer, and Schulz when taken alone or in combination, fail to teach or suggest "cleaning oxide residues from an anti-reflective layer using a second cleaning solution consisting essentially of SC1", as recited in claims 1 and 24.

As acknowledged by the Examiner, APA and Iyer do not disclose or suggest the above claimed features.

The addition of Schulz does not render cleaning oxide residues from an anti-reflective layer using a second cleaning solution consisting essentially of SC1. The Examiner states that "Applicant's argument that Schulz teaches a modified SC1 is acknowledged. However, it is still considered SC1 solution. Unless applicant claims specific chemicals of a SC1 solution, Schulz's modified SC1 still read on claimed SC1

and therefore, would satisfy claimed consisting essentially of SC1”. Applicants respectfully disagree.

Applicants respectfully submit that the modified SC1 (i.e., SC1’) of Schulz does not read on claimed SC1 because the modified SC1 described in Schulz is a chemically different composition from the second cleaning solution consisting essentially of SC1 as recited in claims 1 and 24. The Schulz reference itself describes the modified SC1 composition having different chemical properties from SC1 and thus being different composition from one another. For example, Schulz describes that “the present inventor discovered that the metal contamination problem can be substantially reduced by modifying “step C” or the “SC1” step of the Piranha RCA cleaning sequence of Fig. 1, by adding complex building agents selected from the group including EDTA or DEQUEST.” *See* col. 3, lines 30-35 of Schulz.

Further, there is no motivation or suggestion to combine Schulz with APA or the cited reference. The Examiner states that “it would have been obvious for one skilled in the art at the time of the invention to modify applied prior art in light of Schulz’s teaching of using SC-1 because it would improve removing particles from the surface of the wafers.” Applicants respectfully disagree. In stark contrast, the disclosure in Schulz expressly teaches away from using a second cleaning solution consisting essentially of SC1 because Schulz discusses disadvantages associated with using a second cleaning solution consisting essentially of SC1. Rather, Schulz states “the use of “SC1” tends to increase the metal contamination on the surface of the wafer”. As a result, Schulz clearly discourages cleaning the oxide residues from the anti-reflective layer using a second cleaning solution consisting essentially of SC1.


Thus, one ordinary skill in the art looking to remove oxide residues from a semiconductor substrate would be discouraged or led away from using a second cleaning solution consisting essentially of SC1 based upon the Schulz reference.

Claims 2, 4, 5, 7 and 8 depend from claim 1, and claims 25-27 depend from claim 24. These claims are allowable due to their dependency on the base claims.

Therefore, based on the foregoing, Applicants respectfully request that the Examiner withdraw the rejections of claims 1-3, 5, 7, 8 and 24-27 under 35 U.S.C. § 103(a) and that claims 1-3, 5, 7, 8 and 24-27 are in condition for allowance.

An early and favorable reconsideration is earnestly solicited. If the Examiner has any further questions or comments, the Examiner may telephone Applicants' Attorney to reach a prompt disposition of this application.

Respectfully submitted,



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